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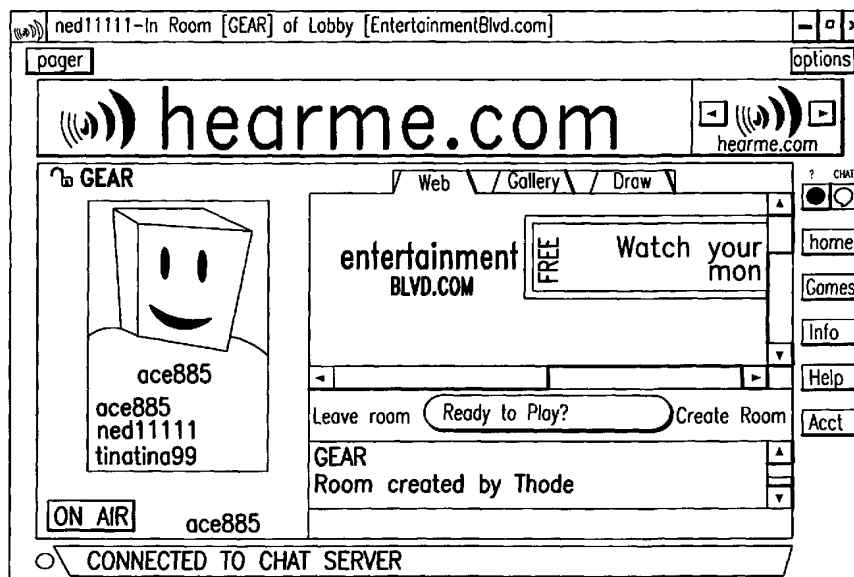
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(54) Title: APPARATUS AND METHOD FOR CREATING MODERATED FORUMS



(57) Abstract: A method of creating forums in a system of computers includes the maintenance of a forum list by a forum controller. Each participant in each forum in the system of computers is encoded in the forum list. When a user creates a forum, the forum is added to the forum list by the forum controller. Any user in the system may create a forum. Forums may be designated as public or private and may be password protected. Forums may also be designated as moderated or unmoderated. Some participants in moderated forums can evict or ban other participants from the forum. Some participants in moderated forums determine which participants will have a right to speak. Forums designated controlled forums limit the maximum number of participant who may speak at any time.

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## **APPARATUS AND METHOD FOR CREATING MODERATED FORUMS**

This application is a continuation-in-part of "Apparatus and Method for Creating Audio Forums," Serial No. 09/358,877 filed on July 22, 1999.

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### **BRIEF DESCRIPTION OF THE INVENTION**

The present invention discloses an apparatus and method for hosting multiparty audio conference calls, or "forums," using a networked system of computers or other  
10 communication devices. More particularly, this invention relates to a system and method for accessing and creating moderated audio forums using a forum controller that is accessible by each computer within the system.

### **BACKGROUND OF THE INVENTION**

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With the advent of the Internet and ever improving network technologies, it is now possible to provide voice communication over computer and communication networks such as corporate intranets and the Internet. Communication technologies that break down voice traffic into data packets for transmission over Internet protocol ("IP") networks are referred  
20 to as "voice over IP" or "VOIP" technologies. In fact, several of the major Internet portal sites, such as Excite.com, provide services that allow people who have the appropriate computer hardware to communicate with one another over the Internet using VOIP technologies. Such services are typically referred to as "chatrooms." FIG. 1 illustrates a typical chatroom. While chatrooms provide a source of entertainment, they possess  
25 drawbacks that limit their commercial utility.

Existing chatrooms provide an unsatisfactory experience for many chatroom users and have limited commercial utility to both chatroom users and chatroom providers. Current chatrooms typically allow only one person to speak at any given moment during the conversation. Chatroom providers implement the limitation of allowing only one speaker at  
30 a time to avoid data loss and to avoid confusion when the number of participants in the chatroom increases. Further, it is known in the art that when too many participants speak at the same time, the speech becomes unintelligible.

Additionally, the flow of conversation in current chatrooms is unfocused. Chatroom participants may have difficulty following a conversation where too many participants are  
35 speaking and too many discussions are simultaneously taking place. When a large group of

people are conversing without direction, conversation becomes unfocused and unintelligible. Finally, current chatroom providers have no control over the makeup of the participants in the chatroom or over the direction of the ongoing conversation.

In view of the foregoing, there is a need in the art for a system and method that  
5 allows users to create forums with regulated privileges, that allow users to create forums that permit users to better control the flow of conversation within the forum and that allow users a means of modifying the forum as the forum progresses.

## SUMMARY OF THE INVENTION

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The method of the invention provides a way of controlling an audio forum in a networked environment. In the method, a forum entry request is received. The forum entry request includes a profile having a set of attributes that are associated with the potential forum participant. Forum privileges are assigned to the potential forum participant based  
15 upon the set of attributes. Further, access of the potential forum participant to an audio forum in a networked environment is controlled in accordance with the assigned forum privileges.

In one embodiment of the present invention, the forum entry request is received at a first computer from a second computer and the profile includes a user identifier and a user  
20 label corresponding to said potential forum participant. In another embodiment of the present invention, the method further includes the step of updating an active user database to include a record for the profile. In yet another embodiment of the present invention, the method further comprises providing a list of forums currently active in the networked environment.

In yet another embodiment of the present invention, a banned status is assigned to a potential forum participant, and the potential forum participant is thereby denied access to the audio forum. In yet another embodiment, an updated participant list is distributed when the potential forum participant is granted access to the audio forum. In still another  
25 embodiment, the privileges granted to the potential forum participant are either moderator, speaker, audience, or lurker privileges.  
30

A further aspect of the present invention is that it is possible to modify aspects of the forum in real time. Thus, for example, the designation of a forum as a public forum may be changed to that of a private forum, and the designation of a forum as a moderated forum may be changed to that of a unmoderated forum.

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## BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the nature and objects of the invention, reference should be made to the accompanying drawings, in which:

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FIG. 1 illustrates a typical prior art voice chat system.

FIG. 2 illustrates a system for maintaining a forum list in accordance with one embodiment of the invention.

10 FIGS. 3(a) - 3(d) illustrate a forum GUI window in accordance with one embodiment of the invention.

FIG. 4 illustrates a forum window in accordance with one embodiment of the invention.

FIG. 5 illustrates the processing associated with accessing a forum selected from a forum list in accordance with one embodiment of the invention.

15 FIG. 6 illustrates a data entry window in accordance with one embodiment of the invention.

FIG. 7 illustrates the processing associated with evicting a participant from a forum in accordance with one embodiment of the invention.

20 FIGS. 8(a)-8(b) illustrate a GUI and a pop up menu that may be used to perform various operations while participating in a forum in accordance with one embodiment of the present invention.

FIG. 9 illustrates the processing associated with banning a participant from a forum in accordance with one embodiment of the invention.

25 Like reference numerals refer to corresponding parts throughout the several views of the drawings.

## DETAILED DESCRIPTION OF THE INVENTION

### System Description

30 FIG. 2 illustrates a network 20 that may be operated in accordance with the present invention. Network 20 includes at least one user computer 22 and at least one server computer 24. User computer 20 and server computer 24 are connected by transmission channel 26, which may be any wired or wireless transmission channel. A firewall may optionally separate user computer 22 and transmission channel 26 and/or server computer  
35 24 and transmission channel 26. The firewall serves to protect user computer 22 and/or

server computer 24 from unwanted traffic. However, the firewall also limits the way in which user computers 22 may access each other across transmission channel 26.

User computer 22 is any device that includes a Central Processing Unit (CPU) 30 connected to a memory (primary and/or secondary) 32, a network connection 36, and a user input/output (“i/o”) device 38. Memory 32 typically stores computer programs, which may include a graphical user interface (“GUI”) 34, a web browser 62, a preferred contact database 64, a block users database 80, a URL module 66, and a user profile database 68. GUI 34 is used to access a forum list 46 using network connection 36. In addition, GUI 34 can present a command line interface to permit a user to directly enter the name of a forum that the user wishes to join and/or any necessary password. Browser 62 is used in some embodiments to view web pages. Contact database 64 is used in some embodiments to maintain a personalized list of preferred user contact information by a particular user. Blocked users database 80 is used in some embodiments to maintain a personalized list of blocked user information by a particular user. User profile database 68 includes pertinent information about a user, including a user identifier and a user label. Additional information, however, is included in user profile database 68 in alternate embodiments.

The user profile is transmitted to forum controller 100 from the user profile database when the user logs into forum controller 100 from user computer 22. User computer 22 also has i/o device 38, including a visual output device (e.g., a computer monitor) for displaying GUI 34. The user i/o device 38 also includes a microphone and one or more speakers to enable audio communication with other forum participants. In a preferred embodiment, user i/o device 38 includes a full duplex sound card so that the user can listen to other forum participants at the same time that the user is speaking.

Server computer 24 includes standard server components, including a network connection device 40, a CPU 42, and a memory (primary and/or secondary) 44. Memory 44 stores a set of computer programs and files to implement the processing associated with the invention. In particular, a forum list 46, an active user database 60, a forum controller 100 are maintained in memory 44. In one embodiment, registered user database 102 is also present in computer memory 44. In other embodiments, registered user database 102 is stored on a third computer that is accessible to server 24. Further information about each user is stored in registered database 102.

Forum controller 100 controls forum list 46 as described in further detail below.

Active user database 60 contains information about each user that is currently participating in a forum in forum list 46. Registered user database 102 contains information about each

user that has the privilege of logging into forum controller 100. In a preferred embodiment, a registered user is defined as a user who has been assigned a unique user identifier and has provided a descriptive user label.

Forum list 46 comprises a list of forums 48 that are present in system 20. At least one user, associated with a user computer 22, participates in each forum 48. Thus, in this sense, at least one user computer 22 is associated with each forum. When a user computer 22 is associated with a forum, the user computer is capable of broadcasting audio, visual, and/or text messages to all other forum participants. Additionally, the user computer is capable of receiving audio, visual, and/or text messages from all other forum participants. When no user computer 22 is associated with a forum it follows that there is no user participating in the forum. When this occurs, the forum is terminated and removed from forum list 46 by forum controller 100. Each forum 48 in forum list 46 includes a forum name 50, an indicator 70 to indicate whether forum 48 is moderated or unmoderated, an indicator 52 to indicate whether forum 48 is public or private, and the user identifier of each forum participant (58). Each forum 48 optionally includes a password 54, and a forum category 56.

Forums 48 that have indicator 70 set to "Moderated" are designated moderated forums. Moderated forums 48 contain one or more moderators who have the privilege to evict or ban individual users from forum 48. A participant who is evicted may re-join forum 48, preferably after a predetermined period of time has lapsed. A participant who is banned may not rejoin forum 48. Both evicted and banned participants are maintained in banned user list 72 that is associated with the forum 48. The distinction between evicted and banned users is that, after a period of time, an evicted user is removed from banned user list 72 whereas a banned user is not. Thus, when the evicted user is removed from banned user list 72, the user may re-enter the forum.

In some embodiments of the present invention, each forum 48 in forum list 46 includes a banned user list 72. Participants in forum 48 that have moderation privileges may place users in banned user list 72. When a user is placed in banned user list 72 the user may not participate in the forum.

The present invention contemplates an additional layer of control over moderated forums. In this embodiment, moderated forums may be designated as controlled forums using flag 76. When flag 76 is not set, the moderated forum is uncontrolled any participant 58 in the forum has speaking privileges. When flag 76 is set, the moderated forum is controlled. When a moderated forum is controlled, participants having moderation privileges have additional control over the forum. In particular, in a controlled

forum, the moderator may control which participants 58 have speaking privileges in the forum. Thus, in a moderated controlled forum 48, the moderator has the privilege to evict participants, ban participants, and control the speaking privileges of participants. Control over who may speak in a forum is implemented through a "microphone" concept.

- 5 Participants 58 who have a microphone may speak and participants 58 who do not have a microphone may not speak. When a moderator grants a participant 58 with speaking privileges, the participant is added to the list of people with microphones 74 that is associated with the forum 48.

- 10 In one embodiment, the creator of forum 48 specifies the maximum number of microphones allowed in a moderated controlled forum. Within this limit, participants in the forum having moderation privileges grant or take away microphones as needed by adding participants to the list of people with microphones 74. The creator of the forum initially enters the forum with a microphone. In other embodiments, participants having moderation privileges adjust the maximum number of microphones. In yet another  
15 embodiment, there is no upper limit on the number of microphones that are distributed in forum 48 and moderators add as many people to list 74 as warranted.

- In one embodiment a user having a microphone is not removed from list 74 when the user leaves forum 48. Therefore, upon re-entry, the user possesses a microphone and may speak in the forum. It will be appreciated that list 74 may be indexed in any number  
20 of ways and that each method of indexing affects the status of a user leaving forum 48. For example, consider an embodiment of the present invention in which list 74 is indexed based on the unique session identifier that forum controller 100 grants to a user upon logging into the system. When the user logs out of forum controller 100, the session identifier is lost. To gain re-entry into the forum, the user logs back into forum controller  
25 100 and thereby obtains a new unique session identifier. Because this session identifier will not match the prior session identifier that is present in list 74, the participant will no longer be associated with a microphone upon re-entry to forum 48. If, however, list 74 is indexed based upon more permanent attributes that are associated with the user, such as the permanent unique user identifier associated with the user in registered user database  
30 102, the user will have a microphone upon re-entry into forum 48 even when the user has logged out of the system prior to re-entry to forum 48. Other more permanent attributes that are used to index list 74 in some embodiments of the present invention include the e-mail address of the user. Users who do not have microphones do not have speaking privileges in a moderated forum 50.



Forums 48 that have indicator 52 set to “public” are designated public forums and forums 48 that have indicator 52 set to “private” are designated private forums. Private forums are hidden in the sense that they are not listed by GUI 34. Forums 48 having a password in password field 54 are password protected forums. A user that wants to  
5 become a participant in forum 48 must provide the corresponding password 54 if the forum is password protected. As used herein, password 54 is broadly construed. Password 54 may be a traditional password that the user must memorize. Alternatively, password 54 may be used to filter the type of users that are allowed entry into forum 48. As an example, password 54 may be used to query the user for personal information such  
10 as the sex of the user. In this example, forum controller 100 asks a user requesting entry into forum 48 whether the user is a women and only allows the user entry into forum 48 when the response is affirmative. In this way, the forum 48 is limited to women. Such a forum is appropriate, for example, when the forum is dedicated to a topic that only women want to discuss. In another example, a forum may be conducted in German. Each user in  
15 the forum is expected to speak in German. In such an example, password 54 may comprise a question, posed to users requesting entry into forum 48, in German. Only users that can speak German would be able to answer the question. As an illustration, the password question may ask, “What is your Firetalk Id?” in German. The user will know his Firetalk Id. In fact in some embodiments, the Firetalk Id may be displayed on user  
20 input/output device 38 by GUI 34. However, only German speaking participants will be able to answer the question correctly. Thus, by proper use of password entry 54, the goal of limiting a forum to a certain class of users is accomplished.

In some embodiments, category 56 is used to categorized using one or more fields 46. Potential participants can search forum list 46 using keywords that are matched  
25 against the various categories 56 that are associated with each forum 48. When a forum 48 having interesting categories is identified with such a search, the potential participant may join the forum.

In one embodiment, each participant field 58 contains a user identifier that represents a participant in the corresponding forum 48. The user identifier serves as a  
30 pointer to a table entry in active user database 60. Table entries in active user database 60 include more detailed information about each forum participant. Table entries may include, for example, the e-mail address of each active user and/or the Internet Protocol address associated with the user. In one embodiment, each forum 48 in forum list 46 that is designated a moderated forum may further include an entry 78 that indicates the status  
35 of each participant 58 in forum 48. In one aspect of the invention, status 78 is selected

from the list of owner, moderator, speaker, or audience. In another aspect of the invention, status 78 is selected from the list of owner, moderator, speaker, or audience, and lurker. A lurker is distinguished from the other types of privileges in the sense that, although the lurker is a participant 58, the identifier associated with the lurker is not displayed by GUI 34 on each user computer 22 associated with participants 58 in the forum. In other embodiments of the present invention, status field 78 is not used. Rather, the privileges that each user has is tracked by entries in a special privileges lists such as the list of moderators 84. Thus, in this aspect of the invention, there is a list of owners associated with each forum (not shown in figure 2), the list of moderators 84, and the list of people with microphones 74. Audience members are all participants 58 who are not in the owners, moderators, or microphone lists. An advantage of such an embodiment is that no special overhead is required to track the privileges of each user. Furthermore, when a user leaves the forum, the lists are typically not updated. Therefore, upon re-entry the privileges the participant had when leaving the forum are automatically restored without any additional processing.

An advantage of the present invention is that the unique structure of each forum 48, allows for a high degree of scalability. By imposing the concept of moderation and control on a forum, forums of the present invention support a large number of participants. Moderators determine who may speak by adding participants to the list of people who have microphones 74, and owners determine who may moderate, by adding participants to the moderators list 84. Furthermore, in large forums having more than 100 or 1000 participants, the audience may be divided. Such division is conceptualized as "rows" or "sections." Each "row" or "section" of the audience has unique privileges. For example, consider an audience that is divided into two sections, sections "A" and "B." The only privilege that the audience has in this example is the privilege to request a microphone. Division of the audience into two sections may be used to impose the requirement that any request for a microphone from audience members in section "A" is processed by a moderator before any request for a microphone originating in section "B." Division of the audience into sections or rows may be imposed by associating first in first out (FIFO) queues forum 48. Thus in the example described above, a first FIFO queue termed "audience A" and a second FIFO queue termed "audience B" are associated with the forum 48 in which a two-section audience is desired. All requests from the audience A FIFO are processed by a moderator before any request from the audience B FIFO is processed.

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Owners have all the privileges that moderator participants have. Additionally, owners can change the status of other participants in the forum 48. For example, owners can promote audience members to moderators or owners, promote moderators to owners, demote moderators to audience members, and demote other owners to moderators or audience members. In one embodiment, all participants 58 in forum 48 are designated “audience” until they are promoted by an owner to moderator, speaker, or owner. The creator of the forum 48 initially enters the forum as an owner.

FIGS. 3 & 4 illustrate a GUI 34 that is in accordance with one embodiment of the present invention. In this embodiment, each row 312 in forum participant window 304 lists a participant 58 in current forum 48. Forum participant window 304 includes a column 78 in which each column entry indicates the status 78 of corresponding participant 58. Each participant 58 in forum participant window 304 is displayed as a nickname, *e.g.* “cora-ann.” The name 50 of the current forum 48 is shown in window 50. In the embodiment shown in FIG. 3(a), a flat gavel graphic in column 310 indicates that “ajones” is an owner in the “General/test” forum 50 and a raised gavel graphic in column 310 indicate that “cora ann” is a moderator. In FIG. 3(b) column 310 does not display a graphic next to “cora ann.” Thus “cora ann” is a member of the audience. That is, “cora ann” is not in the owner list associated with forum 48, the list of moderators 84 associated with forum 48, or the list of people with microphones 74 that is associated with forum 48.

GUI 34 further includes a button 302 (FIG. 3(a)) that is used to launch a forums window 400 (FIG. 4). Forums window 400 is used to list public forums present in forum list 46. Each public forum is listed on a row 402 in forums window 400. Forums window 400 includes a column 404 to indicate whether the public forum is password protected, a column 416 to indicate whether the public forum is a moderated forum, and a column 418 to indicate whether the public forum is a controlled forum. Further, the forum name (50) 406 is provided, the number of rooms presently in the forum is provided in column 420, and the number of participants (58) presently in the forum is in column 408. In the embodiment shown in FIG. 4, a padlock graphic is displayed in column 404 if the forum is password protected, a raised gavel graphic is displayed in column 416 if the forum is a moderated forum, and a file folder graphic is displayed in column 418 if the forum is a controlled forum. If a user presses the “Join” button 414 while a forum, such as “For Guys” or “For Women,” is highlighted in forums window 400, the user is added to the forum by forum controller 100 unless the user is banned from the forum. In some embodiments, a scroll bar 410 may be used to review a large forum list. By using a GUI

34 and a forums window 400 each user in system 20 can rapidly access forums from one centralized location and easily join the forums of interest.

#### Joining a Forum

5           FIG. 5 illustrates processing steps that are executed in accordance with one embodiment of the invention. In the first processing step shown in FIG. 5 (step 502), a user enters in log in information necessary to log in to forum controller 100. Such log in information may be a user identifier, a user label, a password, or any combination of such information.

10           Once the user has entered log in information, GUI 34 accesses the profile corresponding to the user from user profile database 68 (FIG. 2) (step 504). The log in information of step 502 is combined with the profile information of step 504 to generate a log in request that is transmitted to forum controller 100 on server 24 or other designated computer (step 506). This request may include a request for only a specific category 56 of

15 forums, such as "Sports Talk" or "Vacations." In response to the login request, forum controller 100 logs the user in by adding the user to active user database 60 (Fig. 2). Other variants of steps 504, 506 and 508 may be used to achieve the same objective. For example, the user profile may be transferred to forum controller 100 after forum controller 100 has logged the user in. Once the user has logged in, forum controller 100 provides a

20 portion of forum list 46 (step 510). Only forums 48 that are designated as public, however, are provided displayed by user GUI 22 in step 510.

          The portion of the forum list 46 displayed in step 510 is determined by information stored in, for example, user profile database 68. Such information may reflect the interests of the particular user. In alternative embodiments, information stored in registered user

25 database 102 is used to determine what portion of forum list 46 to provide in step 510. For example, in some embodiments, registered user database 102 tracks the type of forums the user has accessed in the past and provides the subset of forum list 46 matching such historic interest. The portion of forum list 46 provided in step 510 is displayed on the user input/output device 38 of user computer 22 (step 512), typically in a forums window, such

30 as forums window 400 (Fig. 4). In some embodiments, steps 510 and 512 is an iterative process, where the user designates certain categories and "searches" forum list 46 (Fig. 2) for forums 48 of interest.

          Once the user selects a forum, forum controller 100 determines whether the selected forum is a moderated forum (70) (Step 520) (Fig. 5). If the selected forum is not

35 a moderated forum (520-No), forum controller 100 joins the user to the selected forum

(step 514) and adds an entry 58 to the forum 48 thereby indicating that the user has joined the forum (step 516). If forum controller 100 determines that the selected forum is a moderated forum (520-Yes), forum controller 100 checks the identity of the user against the banned user database 72 corresponding to selected forum 48 to determine whether the user is banned from the selected forum (step 522). When the user is banned from the selected forum (522-Yes), forum controller 100 does not join the user to the selected forum and sends an appropriate message to user computer 22 (step 524).

When the user is not banned from selected forum 48, forum controller 100 joins the user to the selected forum (step 514) and adds an entry 58 to forum 48 indicating that the user has joined the forum. Further, in some embodiments, forum controller 100 adds a corresponding entry 78 indicating the status of the participant and a corresponding entry 82 indicating that the participant 58 does not have a microphone (step 516). In an alternative embodiment, privileges associated with a participant are separately maintained by lists associated with the forum and not the participant, such as the list of moderators 84, the list of owners, and the list of people having microphones 74. Such lists are not updated when a participant 58 leaves the forum. Therefore, upon re-entry into forum 48, the privileges associated with the forum are restored automatically. It will be appreciated that the privileges lists associated with a forum, such as the list of moderators 84, may be indexed by temporary indices such as the unique session identifier that is assigned to a user each time the user logs into forum controller 100. When a list is indexed by session identifiers and the user logs out of forum controller 100, the user will not have special privileges beyond that of audience privilege because his session identifier will no longer match a session identifier that is stored in the list. As an example, consider an example in which a moderator in forum "A" is in a list of moderators 84 and the list 84 is tracked by session identifiers. In this example, the moderator has been assigned the session identifier 10002 by forum controller 100. The moderator leaves the forum and, in fact, logs out of forum controller 100. The user reconsiders and logs back into forum controller 100.

When the user logs back into forum controller, the user is granted a new session identifier, 10010. When the user rejoins the forum 48, the session identifier associated with the user no longer matches the session identifier stored in list 84. Therefore, the user no longer has moderation privileges. It will be appreciated that numerous methods may be used to index each list in a forum, such as the list of moderators 84, and that the present invention encompasses each of these indexing methods. For example, some lists in a forum 48, such as the banned user list 72 and/or the list of moderators 84, may be indexed by a more permanent indicia such as a unique identifier that is permanently assigned to a user, the e-

mail address of the user, the IP address of the user, and/or other unique permanent information associated with a user.

If the selected forum is password protected, then the user must supply the correct password 54 before step 514 is executed. If the user does not supply the correct password 54, the user will not be joined to the selected forum 48. It will be understood, that the password process is to be broadly construed to encompass methods of filtering the type of user trying to request entry into a forum, as discussed previously. Finally, forum participants are notified that the user has joined the forum (step 518) by sending a broadcast message to GUI 34 of each user computer 22 associated with a participant 58 in the forum. The forum participants window of each user computer is updated to include the user.

Because private forums are not displayed by GUI 34 (Fig. 2), users who wish to participate in a private forum must specify the forum name 50 of the private forum through an interface provided by GUI 34. If the private forum is password protected, the user must additionally provide the password 54 associated with the private forum. When the user correctly identifies a forum 48 in forum list 46, the user is added to forum 48 in the manner described above.

#### Creating a Forum

The present invention allows any user to create a forum from any computer in system 20. Thus, instead of pressing the "join" button 414 in forums window 400 (Fig. 4), a user could press the "create" button 412 to open a data entry window such as window 600 (FIG. 6). A new forum name 50 can be designated in a data entry field such as field 602. The new forum may be password protected by specifying a password in data entry field 604. If a password is supplied in field 604, the password is stored in entry 54 (Fig. 2). The forum may be designated as public or private by toggling check box 606, moderated or unmoderated by toggling check box 608, and controlled or uncontrolled by toggling check box 612. The public or private designation is stored in field 52, the moderated or unmoderated designation is stored in field 70, the controlled or uncontrolled designation is stored in entry 74 of corresponding forum 48 (FIG. 2). If the user designates the forum as a private forum, the forum name is not displayed by GUI 34 (Fig. 2) and additional participants join the private forum by correctly designating the forum name 50. It will be appreciated that such additional users will need to be individually notified of the name of the private forum because the forum name will not be publically

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displayed by GUI 34 (Fig. 2). In a preferred embodiment, each participant 58 is a registered user who is represented by an entry in registered user database 102 (Fig. 2).

The creator of a moderated forum may ban selected users in block list 80 from the outset by toggling check box 610. When the creator of a forum selects this option, forum controller 100 incorporates users from the blocked users database 80 of the forum create  
5 into banned user database 72 associated with forum 48. In other embodiments, data entry window 600 includes fields that allow the user to designate one or more categories 56 that correspond to the forum such as "sports" or "weather." In still other embodiments, the user may designate which users may participate in the forum. Such embodiments provide  
10 the same functionality as password protected forums without any requirement that potential forum participants memorize several passwords.

Once the user has specified the forum name 50 and designated forum 48 as a moderated forum, a moderated forum having the specified name is created and the user is added to the moderated forum 48. The forum participants window 304 (FIG. 3(a)) is  
15 updated to include the user. Further, forum list 46 is updated to include the forum identifier and an entry indicating that the first user has joined the forum. If the newly created forum 48 is a public forum, then forums window 400 is updated to include forum 48. The forum name of a private forum is not displayed in the forums window 400.

At this point a number of unique attributes of the present invention will be  
20 recognizable to those skilled in the art. Moderated forums provide commercial advantages over prior art chatrooms by permitting the forum provider to exclude undesirable participants at the outset and provide a mechanism for excluding undesirable participants while the forum is in progress. For example, a service provider may want to exclude users who make disparaging remarks about the service provider's products. Additionally, a  
25 service provider may exclude a user who has not paid the fee from entering the forum where the service provider sells access to a forum for a fee. The provider can subsequently allow the user access once the user has settled the bill by simply removing the user from the banned forum list, thus eliminating the need to re-register the user and therefore reducing cost. Further, the present invention provides a forum creator better  
30 control of the flow of conversation by limiting the maximum number of speakers.

#### Evicting a Participant

FIGS. 7 & 8 illustrate the steps that may be executed in accordance with one embodiment of the invention. In this embodiment, a moderator or an owner evicts a  
35 participant from forum 48 by right clicking on the participant 58 (Fig. 3) in forum

participant window 304 (step 702) (FIG. 7) and selecting "Kick User" from the pop up menu 802 (step 704). In response, forum controller 100 deletes the entry 58 corresponding to the kicked out participant. Further, forum controller 100 updates forum participant window 304 of each user associated with the forum 48 (step 712) to indicate that the  
5 selected participant is no longer a participant in the forum 48.

When the evicted participant attempts to rejoin the forum 48, the evicted participant is preferably barred for a predetermined period of time (*e.g.*, one hour). In a typical embodiment, a user is evicted by placing the participant in the banned user database 72 associated with the forum 48 for a period of time. While the participant is in  
10 the banned user database 72, the user may not join the forum. The evicted participant is authorized to rejoin forum 48 by removing the user from banned user database 72. When this occurs and the participant logs into the forum, forum controller 100 adds an entry 58 to forum 48 thus restoring the user to the forum. This aspect of the invention is particularly useful in commercial settings where a forum moderator finds it necessary to  
15 remove a forum participant, for example, when the participant is disruptive.

#### Banning a Participant

Figs. 8 & 9 illustrate the steps that may be executed in accordance with another embodiment of the invention. A moderator or an owner bans a forum participant from  
20 forum 48 (Fig. 2) by right clicking on the participant's nickname 308 (Fig. 3) in forum participant window 304 (step 902) and selecting "Ban User" 806 from the pop up menu 802 (step 904). Forum controller 100 transfers the selected participant's (58) identifying information and status information (78) to the banned users database (84)(step 906). Additionally, forum controller 100 deletes the entry 58 corresponding to the selected  
25 participant (step 908). Further, forum controller 100 updates forum participant window 304 of each user associated with the forum 48 (step 912) indicating that the selected participant is no longer participating in forum 48. A banned participant may not rejoin forum 48.

#### 30 Giving/Taking microphones

An owner or a moderator can grant another participant speaking privileges by right clicking on the participant's nickname 308 (FIG. 3(a)) and selecting "Give Microphone" 806 (FIG. 8) from the pop up menu 802. Forum controller 100 updates the forum list and entry 82 (FIG. 2) indicating that the selected participant now has speaking privileges.  
35 Additionally, forum controller 100 notifies other participants in the forum by updating the



forum participants window 304, for example, by displaying a graphic in column 310 next to the selected participant's nickname. In this embodiment, the microphone graphic next to "cora ann" in forum participants window 304 indicates that "cora ann" has speaking privileges FIG. 3(c). This graphic is replaced by a speech bubble graphic while the  
5 participant is speaking. As shown in FIG. 3(d), "ajones" is speaking to "cora ann". If forum 48 is a controlled forum and the maximum number of microphones available in forum 48 have already been granted, then the "Give Microphone" option is disabled. However, it will be appreciated that in one embodiment of the present invention, there is no limit on the number of microphones that may be distributed in a forum and therefore  
10 the "Give Microphone" option is never disabled in such embodiments.

Similarly, an owner or a moderator participant can take away speaking privileges. When an owner or a moderator participant right clicks on nickname 308 (FIG. 3(a)), pop up menu 802 (FIG. 8(b)) is displayed. The owner or moderator selects "Take Away Microphone" 806 from pop up menu 802 as shown in FIG. 8(b). Forum controller 100  
15 updates the forum list and entry 82 (Fig. 2) to indicate that the selected participant does not have speaking privileges. When a participant speaks, forum controller 100 verifies whether the participant has speaking privileges against entry 82. If the participant does not have speaking privileges, forum controller 100 will not transmit the audio feed from the participant. Additionally, forum controller 100 notifies other participants in the forum  
20 by updating the forum participants window 304. For example, the microphone graphic next to "cora ann" in FIG. 3(c) indicates that "cora ann" has speaking privileges. This graphic is removed when "cora ann" no longer has speaking privileges, as shown in FIG. 3(d).

## 25 Changing the Status of Participants

An owner can change the status of other participants to that of an owner by right clicking on the participant's nickname and selecting "Make Owner" from pop up menu 802 (FIG. 8(a)). This option is disabled when the selected participant is already an owner. Forum controller 100 updates the forum list and entry 78 (FIG. 2) indicating that the  
30 selected participant is an owner. Additionally, forum controller 100 notifies other participants in the forum by updating the forum participants window 304. In the embodiment shown in FIG. 3, a flat gavel graphic is displayed next to each owner in the forum. See, for example, "ajones" in FIGS. 3(a)-(c). When a participant is designated as "owner" using this method, the selected participant receives all the privileges that owners  
35 have. In a preferred embodiment, a forum owner has the privilege to promote audience

members to owners, moderators, and/or speakers, and/or to demote owners, moderators, and/or speakers to audience members. If the selected participant is a moderator, then forum controller 100 will send a message to the user computer 22 associated with the selected participant and will only change the status of the selected participant when the  
5 selected participant agrees to the change. For example, in FIG. 3(a), when “ajones” selects “cora ann” and further selects “Make Owner” from pop up menu 802, forum controller 100 will send a message to computer 22 associated with “cora ann” stating, for example, “Ajones wants to make you an owner. Do you accept?” Forum controller 100 will change the status of “cora ann” from a moderator to an owner only if “cora ann” accepts that  
10 change in status. If “cora ann” does not accept the change, forum controller 100 will not change the status of “cora ann.”

Additionally, an owner participant can change the status of other participants to that of a moderator by right clicking on the participant’s nickname and selecting “Make Moderator” from the pop up menu 802 (FIG. 8(a)). This option is disabled if the selected  
15 participant is a moderator. Forum controller 100 updates the forum list and entry 78 (FIG. 2) indicating that the selected participant is now a moderator. Additionally, forum controller 100 notifies other participants in the forum by updating the forum participants window 304. In the embodiment shown in FIG. 3, a raised gavel graphic is displayed next to moderator participant, for example, “cora ann” in FIG. 3(a). The selected participant  
20 now has all the privileges of a moderator. If the selected participant is an owner, then forum controller 100 will send a message to user computer 22 associated with the selected participant and will only change the participant’s status if the participant agrees

### Conclusion

25 The foregoing descriptions of specific embodiments of the present invention are presented for the purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, obviously many modifications and variations are possible in view of the above teachings. The embodiments were chosen and described in order to best explain the principals of the  
30 invention and its practical applications, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims and their equivalents.

The foregoing invention is intended for use in telephony systems such as the  
35 apparatus and method disclosed in “Apparatus and Method for Establishing An Audio

Conference In a Networked Environment,” Serial No. 09/358,878, filed 20 July 1999,  
which is incorporated by reference herein.

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WHAT IS CLAIMED IS:

1. A method of controlling an audio forum in a networked environment, said method comprising the steps of:
  - 5 receiving a forum entry request including a profile associated with a potential forum participant, said profile including a set of attributes;  
assigning forum privileges to said potential forum participant based upon said set of attributes; and  
controlling access of said potential forum participant to an audio forum in a  
10 networked environment in accordance with said forum privileges.
  2. The method of claim 1 wherein said receiving step includes the step of receiving at a first computer a forum entry request from a second computer, wherein said forum entry request includes a profile with a user identifier and a user label corresponding to said  
15 potential forum participant.
  3. The method of claim 1 further including the step of updating an active user database to include a record for said profile.
  - 20 4. The method of claim 1 further comprising the step of providing a list of forums currently active in said networked environment.
  5. The method of claim 1 wherein said assigning step includes the step of assigning a banned status to said potential participant, said controlling step thereby denying said  
25 potential forum participant from access to said audio forum.
  6. The method of claim 1 wherein said controlling step includes the step of distributing an updated participant list when said potential forum participant is granted access to said audio forum.  
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  7. The method of claim 1 wherein said assigning step includes the step of assigning forum privileges selected from the group including owner and moderator.
  8. A computer system for controlling an audio forum in a networked environment, the  
35 computer system comprising:

- a central processing unit;  
a memory, coupled to the central processing unit, the memory storing  
a forum list, each forum in said forum list including at least one forum  
participant having a forum privilege, and  
5 a forum controller, executable by the central processing unit, comprising:  
instructions for receiving a forum entry request including a profile  
associated with a potential forum participant, said profile including a set of  
attributes;  
instructions for assigning forum privileges to said potential forum  
10 participant based upon said set of attributes; and  
instructions for controlling access of said potential forum  
participant to an audio forum in a networked environment in accordance  
with said forum privileges.
- 15 9. The computer system claim 8 wherein said instructions for receiving a forum entry  
request includes instructions for receiving, at a first computer, a forum entry request from  
a second computer, wherein said forum entry request includes a profile with a user  
identifier and a user label corresponding to said potential forum participant.
- 20 10. The computer system of claim 8 wherein said memory further stores an active user  
database for storing information about active users and said forum controller further  
includes instructions for updating said active user database to include a record for said  
profile.
- 25 11. The computer system of claim 8 wherein said forum controller further comprises  
instructions for providing a list of forums currently active in said networked environment.
12. The computer system of claim 8 wherein said instructions for assigning forum  
privileges to said potential forum participant further includes instructions for assigning a  
30 banned status to said potential participant, said instructions for controlling access of said  
potential forum participant thereby denying said potential forum participant from access to  
said audio forum.

13. The computer system of claim 8 wherein said instructions for controlling access of said potential forum includes instructions for distributing an updated participant list when said potential forum participant is granted access to said audio forum.
- 5 14. The computer system of claim 8 wherein said instructions for assigning forum privileges to said potential forum participant includes instructions for assigning forum privileges selected from the group including owner and moderator.
15. A computer program product for use in conjunction with a computer system, the  
10 computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising:
- a forum list, each forum in said forum list including at least one forum participant having a forum privilege, and
  - 15 a forum controller module comprising:
    - instructions for receiving a forum entry request including a profile associated with a potential forum participant, said profile including a set of attributes;
    - instructions for assigning forum privileges to said potential forum  
20 participant based upon said set of attributes; and
    - instructions for controlling access of said potential forum participant to an audio forum in a networked environment in accordance with said forum privileges.
16. The computer program product of claim 15 wherein said instructions for receiving a  
25 forum entry request includes instructions for receiving, at a first computer, a forum entry request from a second computer, wherein said forum entry request includes a profile with a user identifier and a user label corresponding to said potential forum participant.
17. The computer program product of claim 15 further including an active user database  
30 for storing information about active users; wherein, said forum controller module further includes instructions for updating said active user database to include a record for said profile.

18. The computer program product of claim 15 wherein said forum controller further comprises instructions for providing a list of forums currently active in said networked environment.

5 19. The computer program product of claim 15 wherein said instructions for assigning forum privileges to said potential forum participant further includes instructions for assigning a banned status to said potential participant, said instructions for controlling access of said potential forum participant thereby denying said potential forum participant from access to said audio forum.

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20. The computer program product of claim 15 wherein said instructions for controlling access of said potential forum includes instructions for distributing an updated participant list when said potential forum participant is granted access to said audio forum.

15 21. The computer program product of claim 15 wherein said instructions for assigning forum privileges to said potential forum participant includes instructions for assigning forum privileges selected from the group including owner and moderator.

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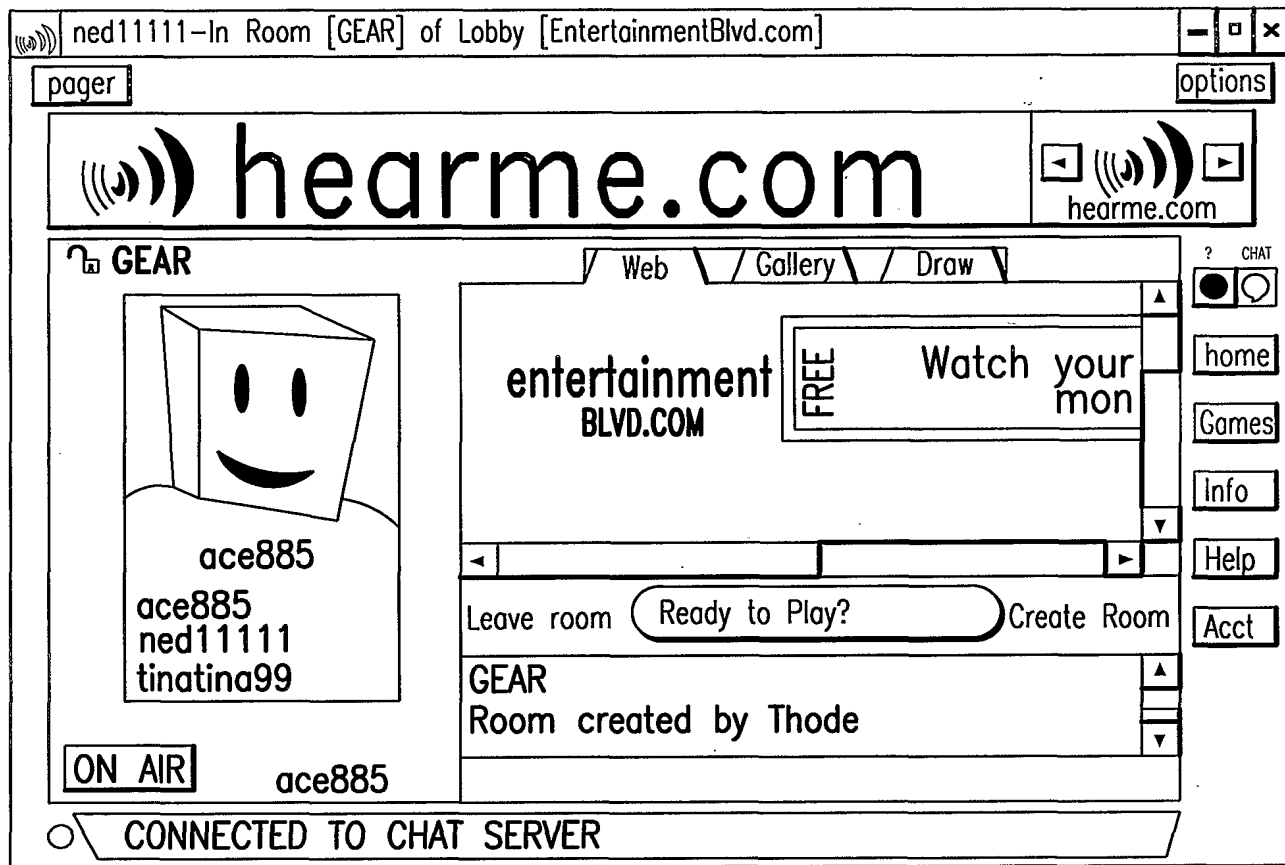


FIG. 1



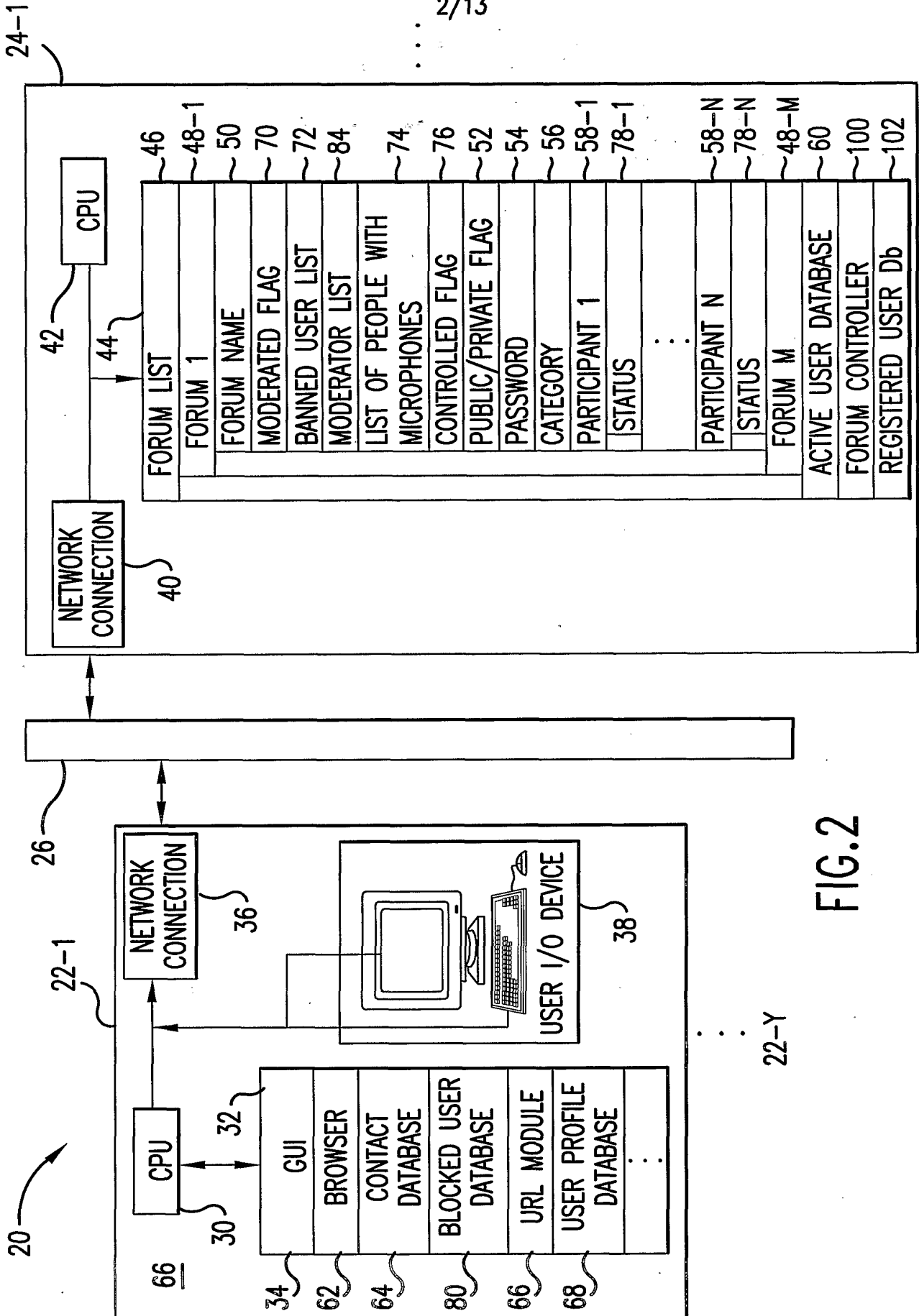


FIG. 2

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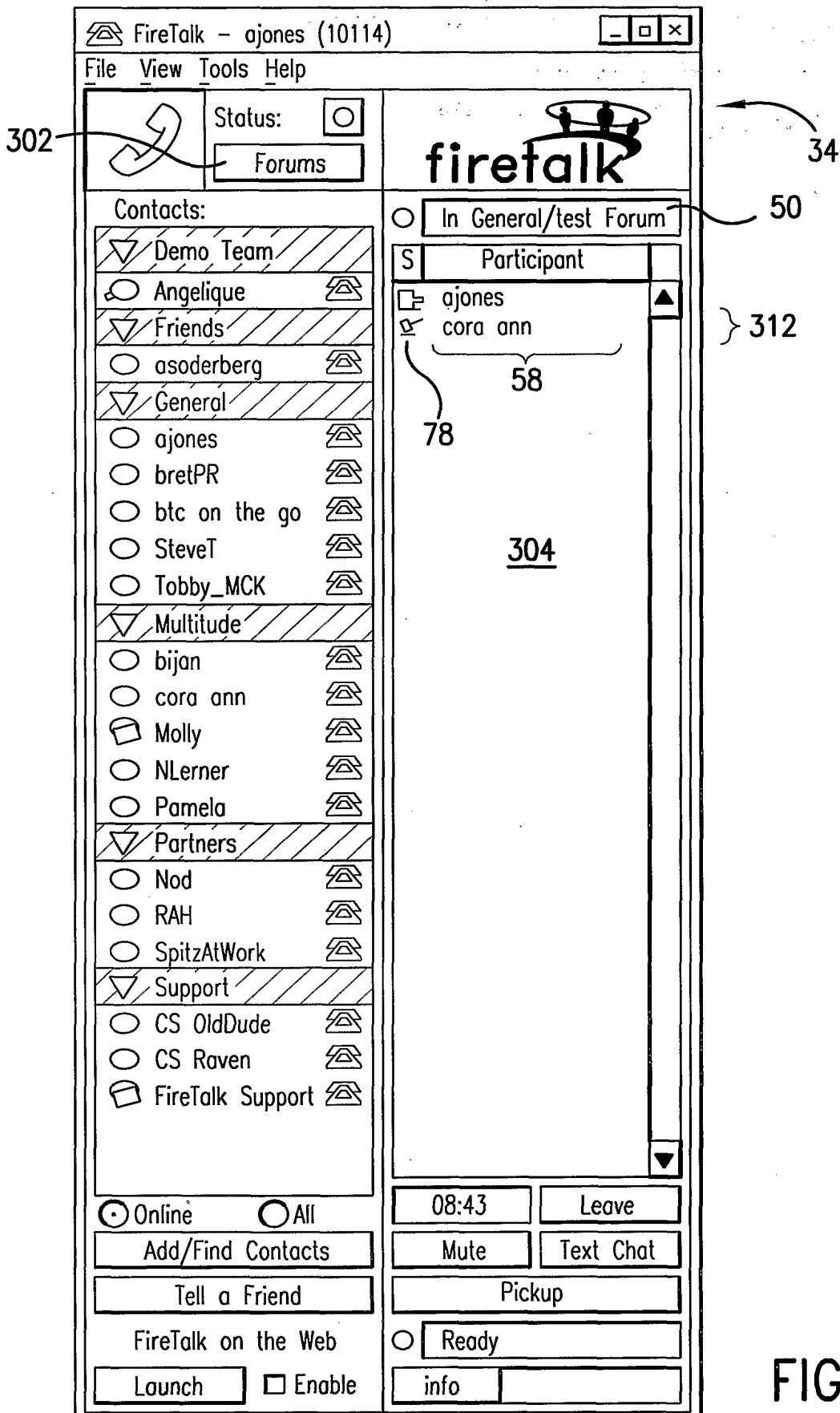


FIG.3(a)

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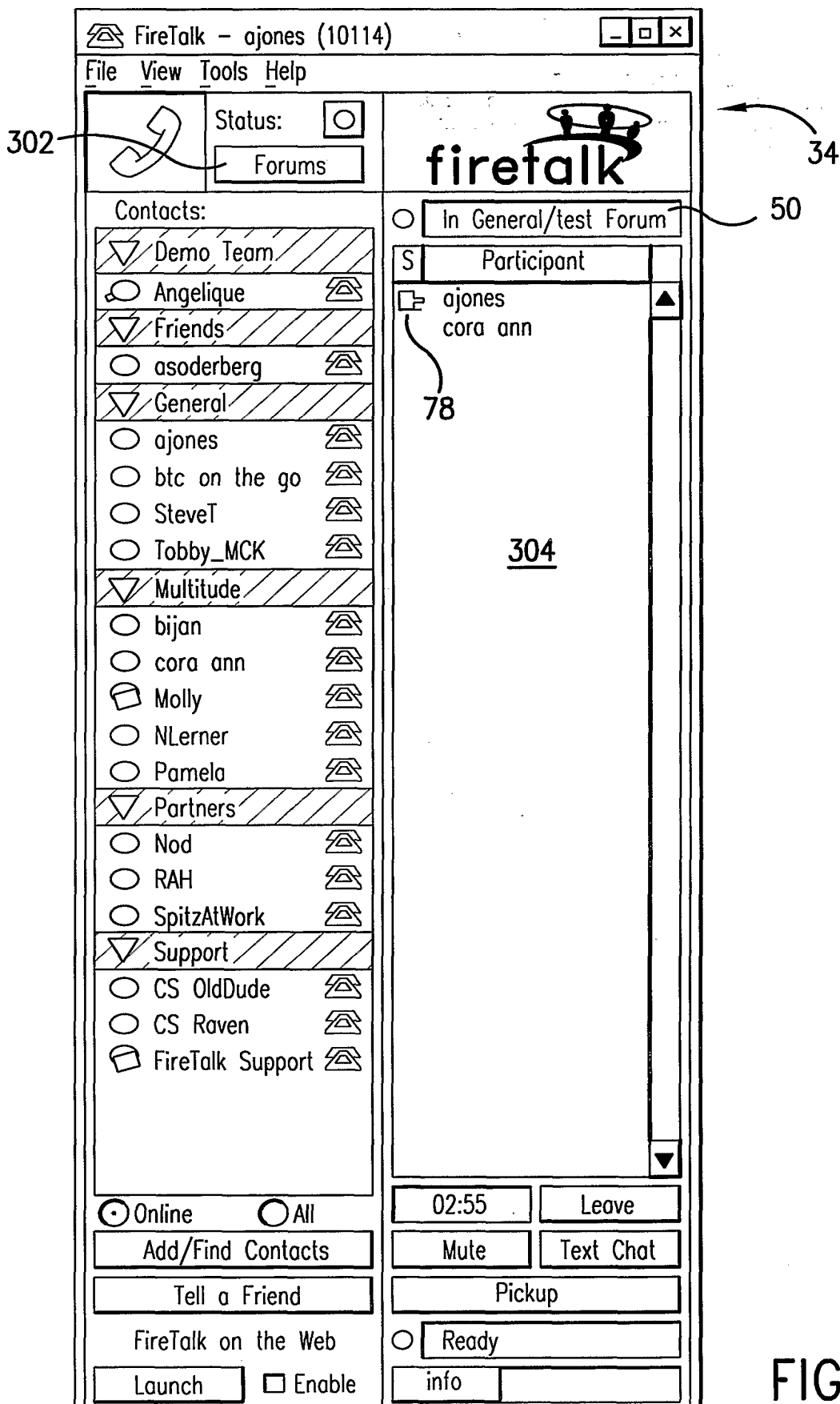


FIG.3(b)

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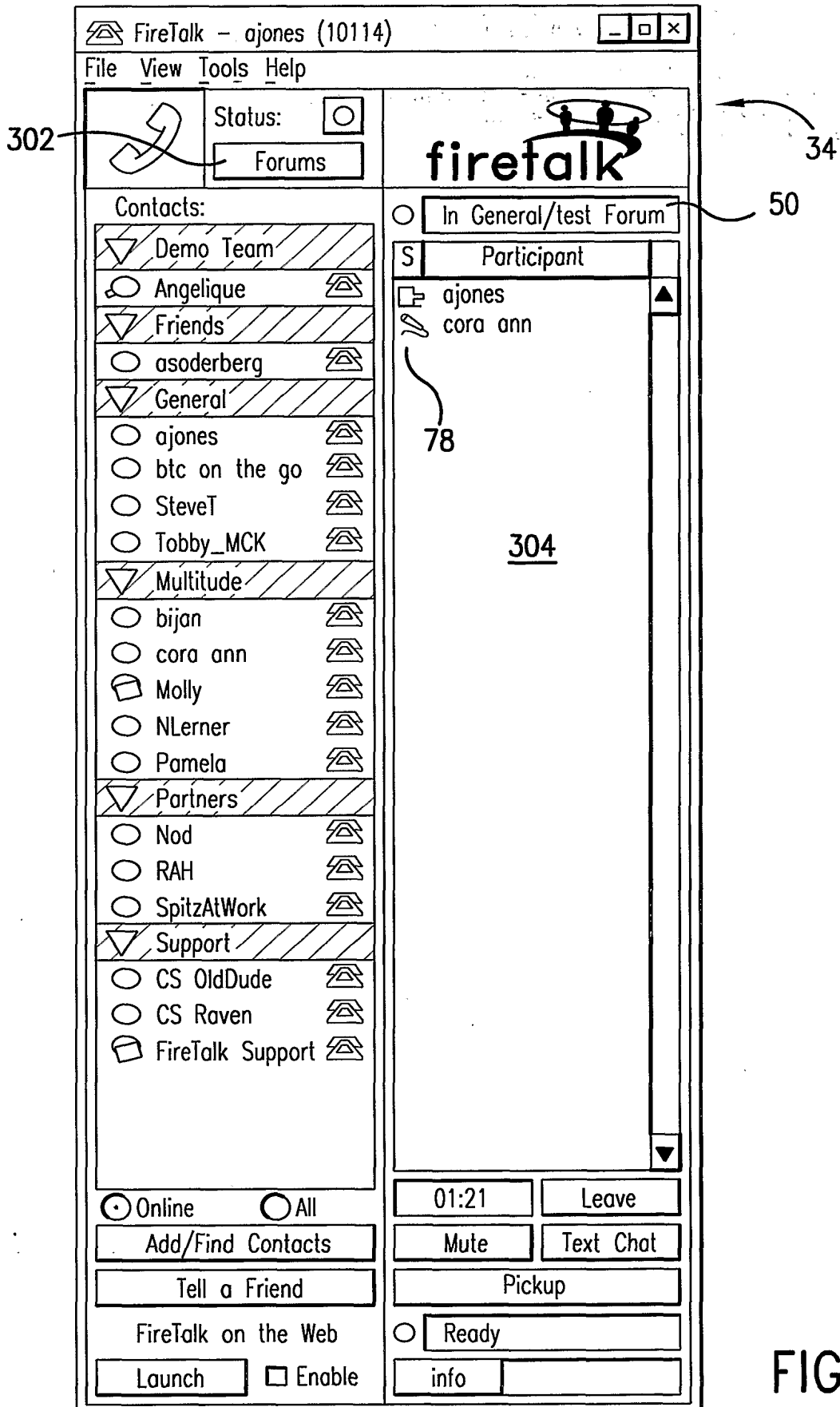


FIG.3(c)

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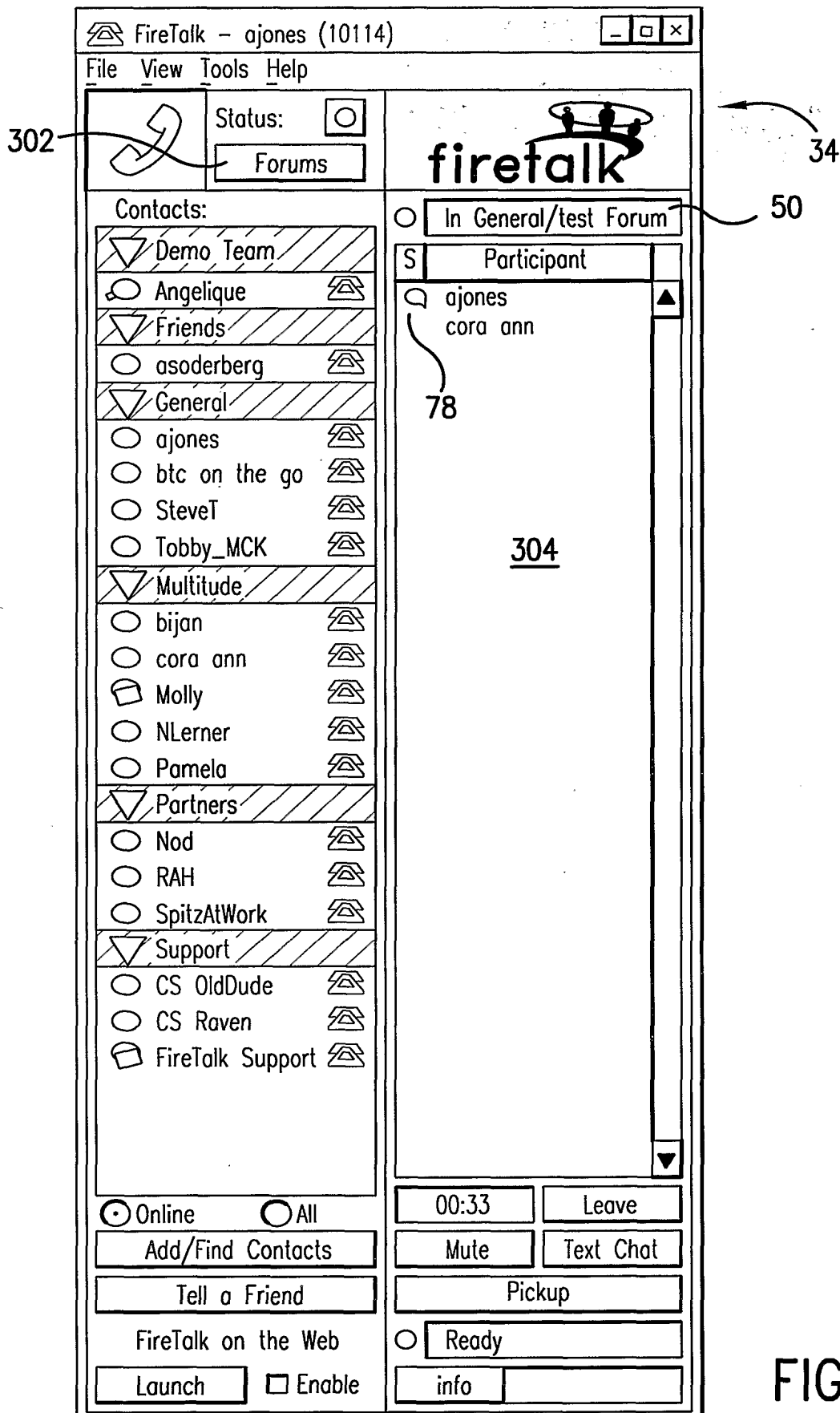
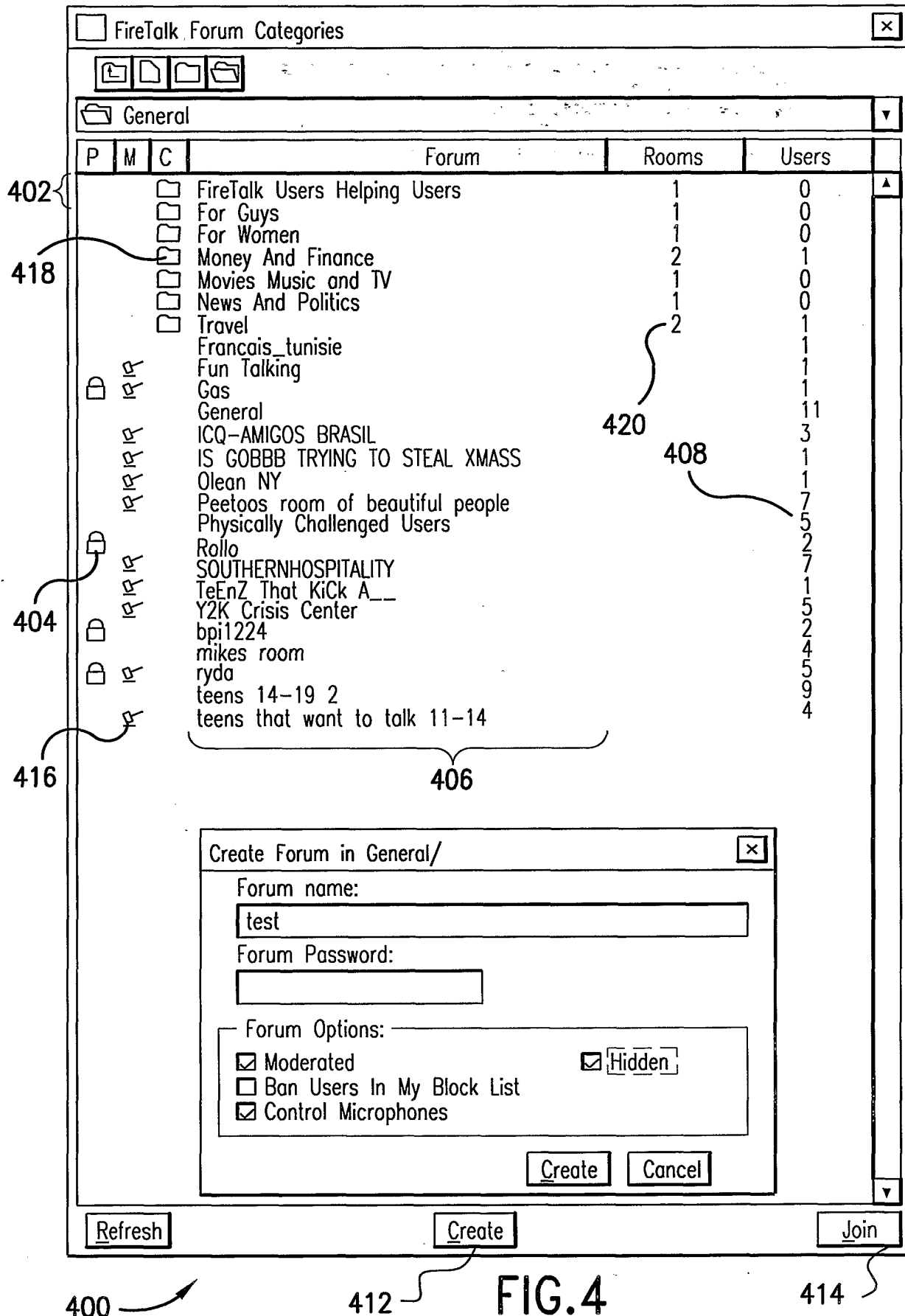


FIG.3(d)

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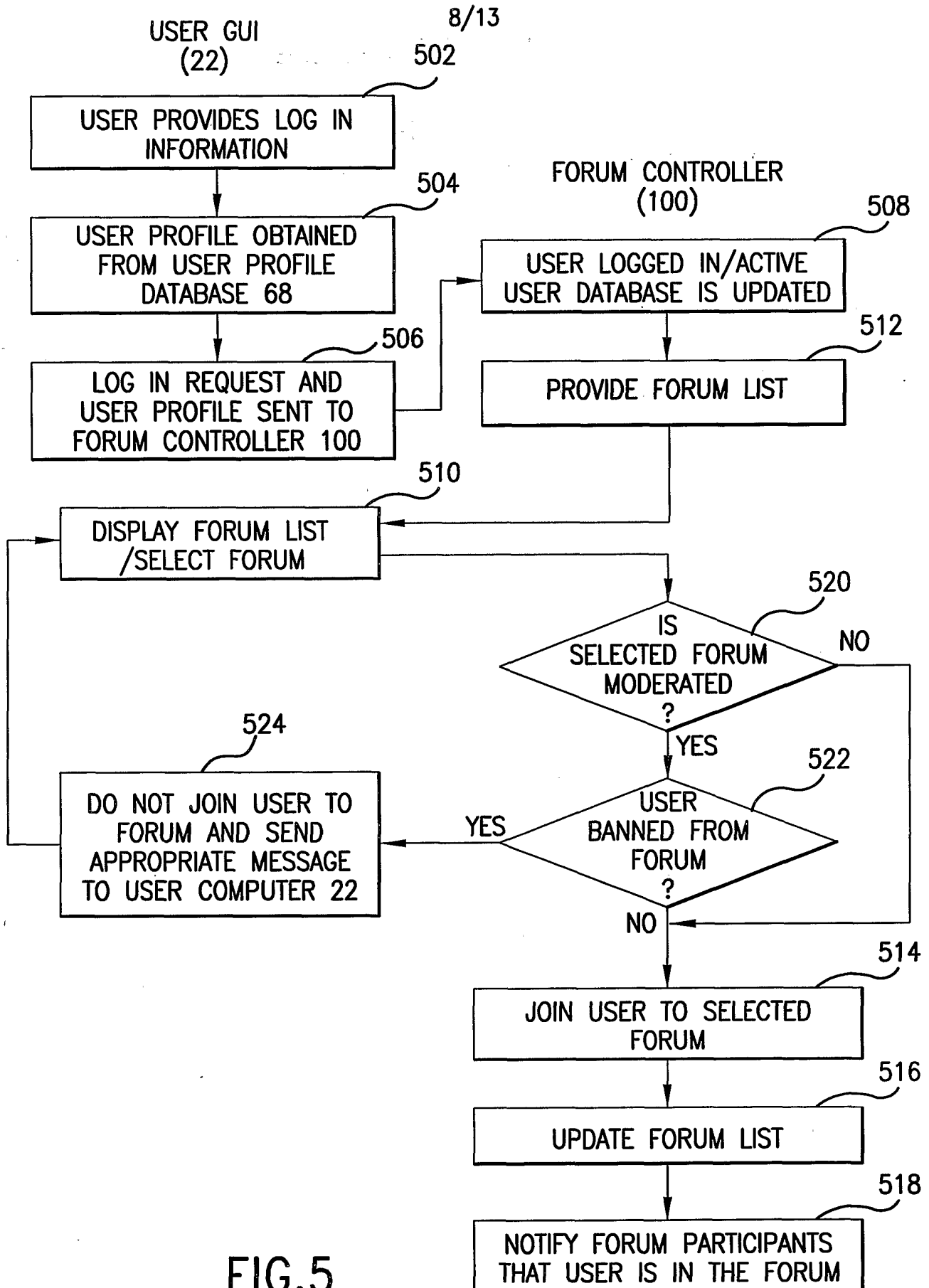


FIG.5

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Create Forum in General/

Forum name:  
test

Forum Password:

Forum Options:

☒ Moderated ☒ Hidden

☐ Ban Users In My Block List

☒ Control Microphones

Create Cancel

FIG.6



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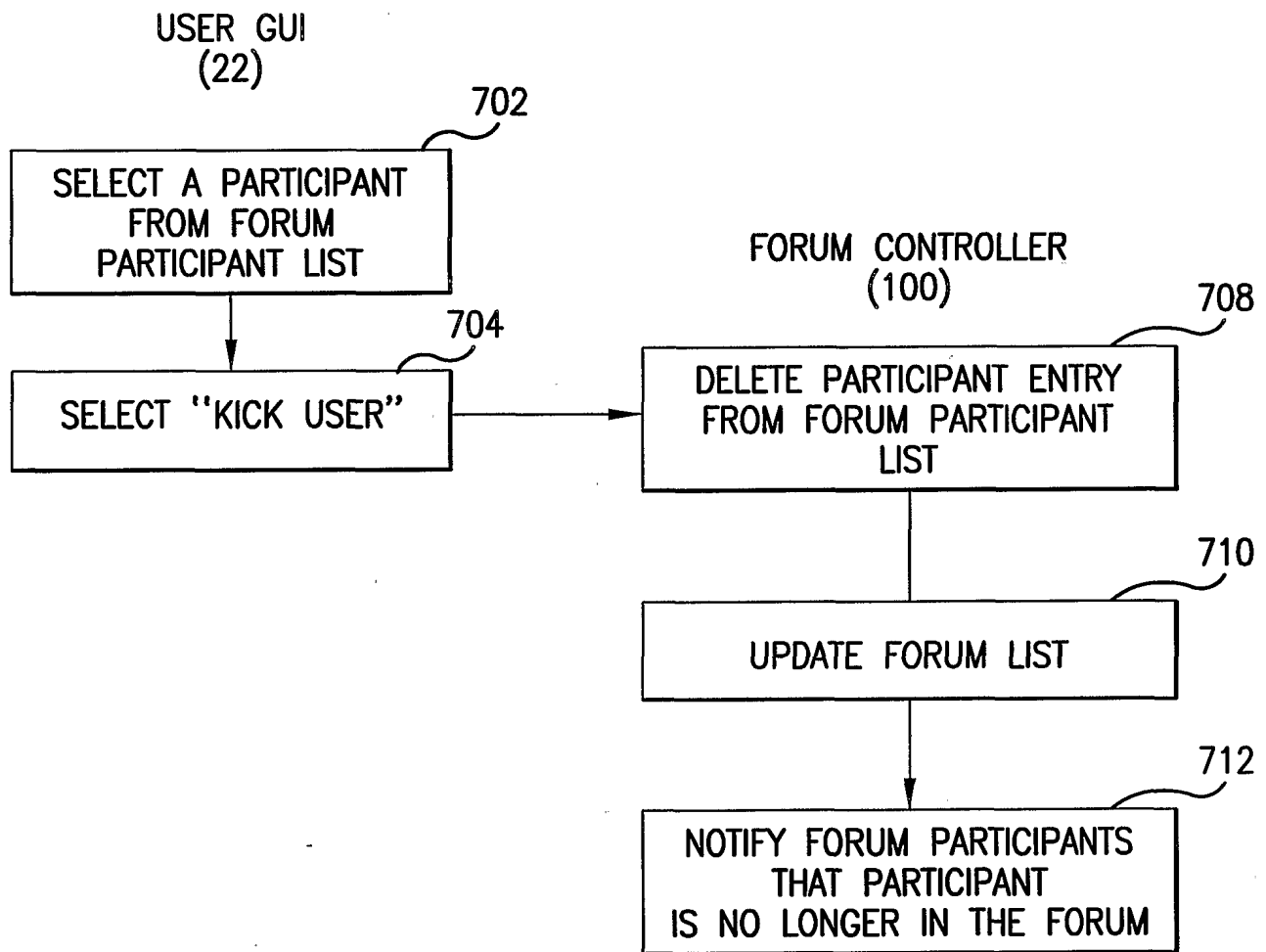


FIG.7

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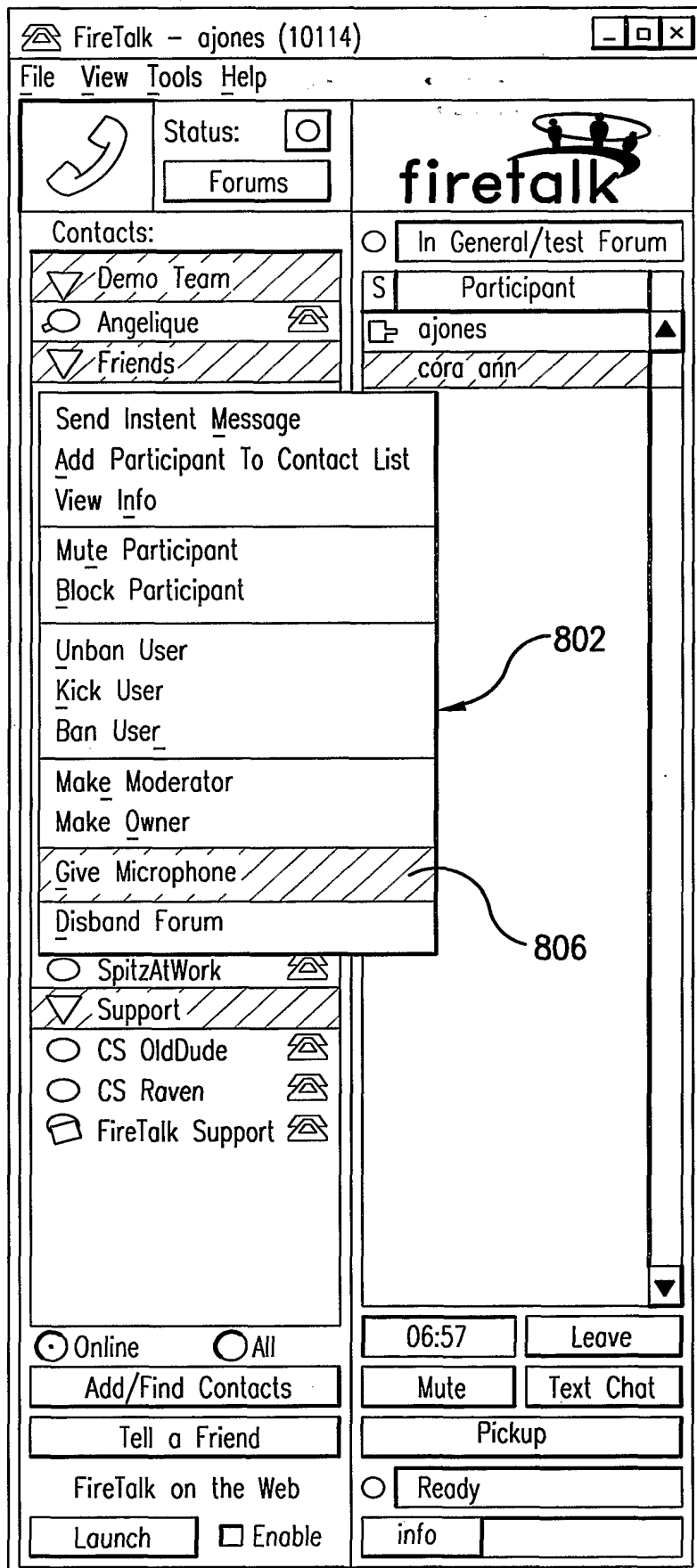
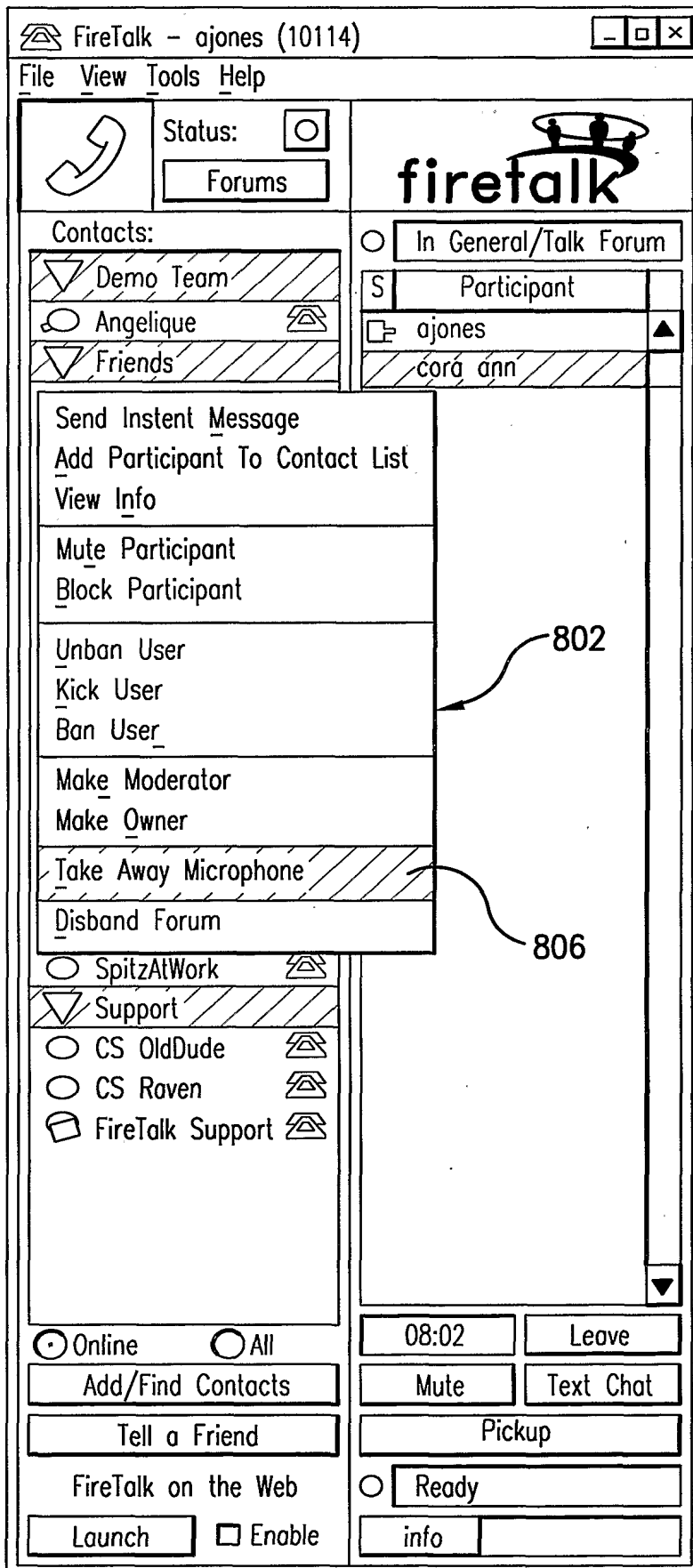


FIG.8(a)

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802

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FIG.8(b)

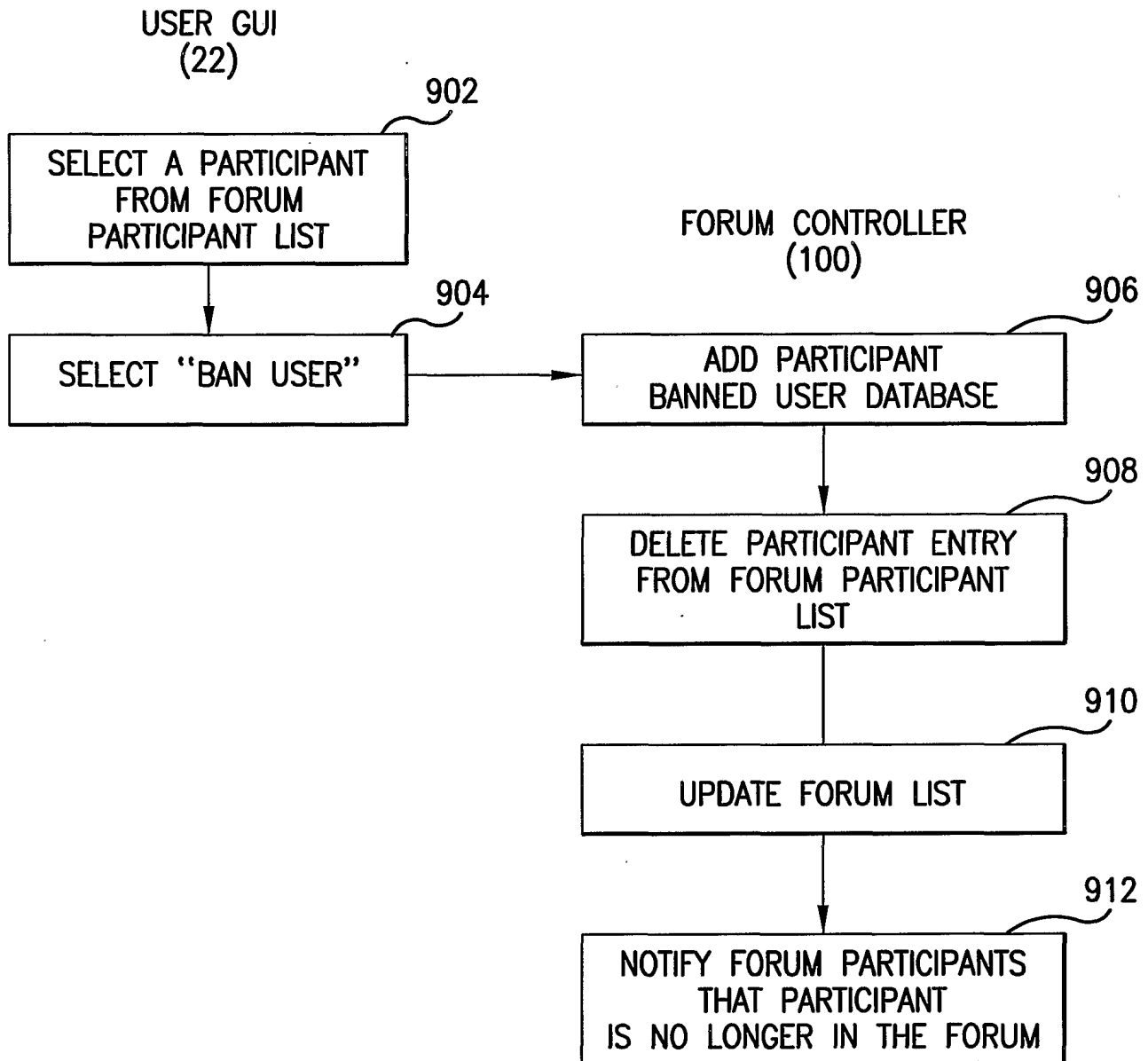


FIG.9

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/00979

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :GO6F 13/00

US CL :709/204, 207

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 709/204, 206, 207, 217, 219, 223, 225, 227, 313, 328, 329

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,956,491 A (MARKS) 21 September 1999, cols 7-10.	1-21
A	US 5,822,523 A (ROTHSCHILD et al) 13 October 1998.	1-21



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

22 FEBRUARY 2001

Date of mailing of the international search report

09 APR 2001

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